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RELATIONSHIP BETWEEN BIOMARKERS AND SUBSEQUENT ADVERSE ISCHEMIC AND BLEEDING EVENTS AFTER ST-ELEVATION MYOCARDIAL INFARCTION: A HORIZONS-AMI SUBSTUDY

i2 Poster Contributions
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Session Title: PCI - Acute MI
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Background: We investigated the relationship between several novel Inflammatory and thrombotic biomarkers and subsequent ischemic and/or bleeding events (Net adverse clinical outcomes-NACE) in pts with STEMI treated with primary PCI.

Methods: 23 inflammatory and thrombotic biomarkers were prospectively measured at enrollment and just prior to discharge in 502 STEMI pts undergoing primary PCI with TAXUS paclitaxel-eluting stents in a formal substudy of the HORIZONS-AMI trial. Samples were analyzed in a central core laboratory. We divided pts in tertiles based on biomarker levels and examined associations between biomarkers and NACE (a composite of death, reinfarction, target vessel revascularization for ischemia, stroke or major bleeding) at 3 year follow-up. For biomarkers measured at discharge, only out-of hospital events were analyzed.

Results: The 3-year NACE rate was 20.2% (n=100). Table 1 shows NACE rates stratified by tertiles of biomarkers t admission and discharge. Four biomarkers measured at admission (BNP, Cystatin-C, D-Dimer and ESAM) and 4 different biomarkers measured at discharge (Adiponectin, Angiotensinogen, D-dimer and MPO) were associated with 3-year NACE. Multivariate analysis models will be available at time of presentation.

Conclusions: We identified novel inflammatory and thrombotic biomarkers with the potential to predict late (up to 3 years) composite ischemic or bleeding events. Larger trials to confirm the utility of these biomarkers are warranted.

Table 1: Three-year NACE rates stratified by biomarker tertiles

	Lowest Tertile	Intermediate tertile	Highest Tertile	P 3-way	P Low vs High tertile
Admission samples					
hs-CRP	15.6%	22.9%	22.9%	0.18	0.10
BNP	15.8%	19.7%	26.3%	0.07	0.02
Cystatin-C	13.0%	20..4%	27.8%	<0.01	<0.01
D-Dimer	16.2%	15.2%	30.1%	<0.01	<0.01
ESAM	15.8%	21.2%	24.8%	0.14	0.05
Discharge samples					
Hs-CRP	15.0%	15.5%	19.3%	0.56	0.34
BNP	13.0%	13.8%	21.8%	0.09	0.05
Adiponectin	10.6%	19.3%	19.9%	0.07	0.03
Angiotensinogen	18.6%	21.8%	9.7%	0.02	0.03
D-dimer	11.6%	16.5%	20.4%	0.13	0.04
MPO	10.9%	16.7%	20.4%	0.09	0.03

NACE= Net Adverse Cardiovascular Events; hs-CRP= high-sensitivity C-reactive protein; BNP= Brain natriuretic peptide; MPO=myeloperoxidase; ESAM=Endothelial cell-selective adhesion molecule